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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/720,081

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Yoshikazu Miwa

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EXAMINER

DANIELS, MATTHEW J

ART UNIT

PAPER NUMBER

1732

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

03/21/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.		Applicant(s)	
	10/720,081		MIWA ET AL.	
	Examiner		Art Unit	
	Matthew J. Daniels		1732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) 15-23 and 30-33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 and 24-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
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| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Rejections not maintained are withdrawn.
2. **Claims 1-3** are rejected under 35 U.S.C. 103(a) as being unpatentable over Koji (JP 11-105157) in view of Sims (USPN 4385090). **As to Claim 1**, Koji teaches a molding manufacturing method, comprising:

preparing a long molding body including a molding main body made of thermoplastic material and a decorative layer (Par. [0007]), the molding main body and the decorative layer formed integrally so that the decorative layer is provided along a longitudinal direction of the molding main body on a surface thereof (Drawing 3);

setting the molding body in a fixed die (Drawing 3);

heating and softening an end portion of the molding body, by irradiating an infrared ray onto a back surface of the molding main body corresponding to the end portion of the molding body (Par. [0012]); and press forming the end portion of the molding body by pressing a movable punch onto the fixed die while the end portion of the molding body is in a heated and softened state to bend the end portion of the molding body to obtain an end cover portion having a predetermined shape (Drawings 4 and 5).

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Koji appears to be silent to:

- a) the decorative layer being higher than the molding main body in hardness and melt temperature
- b) heating and softening while maintaining a condition in which the decorative layer is harder than the molding main body
- c) co-extrusion
- d) while maintaining a condition in which the decorative layer is harder than the molding main body.

However, these aspects would have been prima facie obvious over Sims, who teaches a polyvinyl chloride decorative layer (1:56) and a polyethylene foam (3:35) which would fulfill the conditions recited in (a), (b), and (d) when combined with the method of Koji and when the backside of the material of Sims is heated by the method of Koji. Although Sims is silent to the co-extrusion, note that there is no recited step of co-extruding the material. Therefore, the limitation appears to be drawn to any decorative layer and main body which could be formed integrally by co-extrusion. The laminate of Sims could be formed integrally by co-extrusion, and therefore meets the claim limitation by providing the required structural limitations of the preform.

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Sims into that of Koji in order to provide a covering material to a foam article and desirably cover the edges of the article to hide seams and joints.

As to Claim 2, Koji teaches the pulsing of the infrared energy (Drawing 6). **As to Claim 3**, Koji teaches the near infrared rays and heating device (Drawing 2 and Par. [0012]).

3. **Claim 4** is rejected under 35 U.S.C. 103(a) as being unpatentable over Koji (JP 11-105157) in view of Sims (USPN 4385090), and further in view of Costello (USPN 3655173). Koji and Sims teach the subject matter of Claim 3 above under 35 USC 103(a). **As to Claim 4**, Koji and Sims are silent to the reflecting mirror and the lamp being farther than the focal length. However, defocused radiation sources having a reflector and a lamp located at a distance farther than the focal length are conventional in the art. See Costello's teachings at 3:1-12, which would provide a near infrared ray. It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Costello into that of Koji and Sims in order to provide more uniform heating of the surface (3:9).

4. **Claims 5-12** are rejected under 35 U.S.C. 103(a) as being unpatentable over Koji (JP 11-105157) in view of Sims (USPN 4385090) and Loy (USPN 3830680). **As to Claim 5**, Koji teaches a molding manufacturing method, comprising: preparing a long molding body including a molding main body made of thermoplastic material and a decorative layer (Par. [0007]), the molding main body and the decorative layer formed integrally so that the decorative layer is provided along a longitudinal direction of the molding main body on a surface thereof (Drawing 4);

setting the molding body in a fixed die (Drawing 4);

heating and softening an end portion of the molding body (Par. [0012])

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press forming the end portion of the molding body by moving the movable punch toward the fixed die along a predetermined path such that the movable punch fits with the fixed die at an end of the path, to bend the end portion of the molding body (Drawing 5).

Koji appears to be silent to:

- a) the decorative layer being higher than the molding main body in hardness and melt temperature
- b) heating and softening while maintaining a condition in which the decorative layer is harder than the molding main body
- c) moving the movable punch obliquely toward the die
- d) maintaining a condition in which the decorative layer is harder than the molding main body

However, these aspects would have been prima facie obvious for the following reasons:

a and b) Sims teaches a polyvinyl chloride decorative layer (1:56) and a polyethylene foam (3:35) which would obviously fulfill the conditions recited in (a) and (b) when combined with the method of Koji.

c) Loy teaches obliquely moving a die component to bend a heated thermoplastic component (Figs. 5-7)

d) When the material of Sims is combined with the method of Koji, the lamp of Koji would preferentially heat the backside, and therefore would maintain a condition in which the decorative layer is harder than the main moulding body.

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the methods of Sims and Loy into that of Koji in order to provide a covering material to a foam article and desirably cover the edges of the article to hide seams and

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joints (Sims), and to permit application of pressure into the formed corner during the die forming operation (Loy, 6:59-67). **As to Claim 6**, Koji teaches fixing the part to be formed in a longitudinal direction (Drawing 3). **As to Claim 7**, because Loy clearly suggests pressing into the corner, it would have been prima facie obvious to press at an angle which divides the bending angle of the fixed die into halves. **As to Claim 8**, because the actuator of Loy (Item 72) appears to be attached to a fixed length arm, the movement would obviously be nonlinear during actuation. **As to Claim 9**, because the actuator of Loy (Item 72) would operate in an arc, it would obviously be separate from the dividing line of the bending angle except in the vicinity of engaging the fixed die. **As to Claim 10**, because both Koji (Drawing 4) and Loy (Fig. 6) teach application of the infrared radiation to only the part to be bent or folded, by their location in an ambient environment, the fixed die and movable punches would obviously have been at an ambient temperature cooler than the temperature of the end portion. **As to Claim 11**, Loy clearly teaches trimming an end of the bent portion (2:21-26), and it would have been obvious to do so in order to improve the appearance. **As to Claim 12**, in either the method of Koji (Drawings 3-6) or Loy (Figs. 5-7), bending of the end portion while compressing between the fixed die and movable punch would have been an obvious aspect in order to improve the appearance of the edge by folding.

5. **Claims 13 and 14** are rejected under 35 U.S.C. 103(a) as being unpatentable over Koji (JP 11-105157) in view of Harris (USPN 4864786) and Hideyasu (JP 2001-088155). **As to Claim 13**, Koji teaches a molding manufacturing method, comprising: a molding main portion, a leg portion protruding from a back surface of the molding main body (Drawing 4, Item 16);

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removing the leg portion from a second region consecutive with a distal side of the first region to form a step between the first region and the second region on the back side (Drawing 4, Item 18);

heating and softening an end portion of the cut piece by irradiating an infrared ray onto a back surface of the molding main body corresponding the end portion of the molding body (Par. [0012]); and

press forming the end portion of the cut piece by pressing a movable punch onto the fixed die while the end portion of the cut piece is in a heated and softened state to bend the end portion of the cut piece to obtain an end cover portion having a predetermined shape (Drawing 4).

Koji appears to be silent to the following aspects of the inventive method:

- a) extrusion molding a molding body made of a thermoplastic material including a molding main body, integrally coextruded with a decorative layer, and a leg portion and a pair of protruding portions, the pair of protruding portions each protruding from one of both sides of the leg portion a width direction of the molding main body.
- b) cutting the molding body into a cut piece having a predetermined length;
- c) removing the protruding portions from a back side of an end portion of the cut piece to form a first region thereon; and removing the protruding portions and the leg portion from a second region consecutive with a distal side of the first region to form a step.
- d) the decorative layer being higher than the molding main body in hardness and melt temperature
- e) heating and softening while maintaining a condition in which the decorative layer is harder than the molding main body

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f) positioning the cut piece in a longitudinal direction thereof by bringing the step into contact with the fixed die;

g) wherein the press forming is performed while maintaining a condition in which the decorative layer is harder than the molding main body.

However, these aspects would have been prima facie obvious for the following reasons:

a) Harris teaches extrusion molding a molding body made of thermoplastic material being integrally coextruded with a decorative layer harder than the molding main body (3:29-33).

Hideyasu teaches extrusion molding (paragraph 5) a similar article having a leg portion and protruding portions protruding from both sides of the leg (Figure 1).

b) Cutting to a desired length is conventional and obvious over Hideyasu in that articles produces articles having a definite length (Fig. 12)

c) Hideyasu teaches removing the protruding portions from a back side to form a first region, and removing the protruding portions and leg portions in a second consecutive region to form a step (Drawing 7)

d and e) The decorative metal layer of Harris would fulfill the claimed conditions of being harder and higher in melt temperature either at room temperature or when heated.

f) Either Koji (Fig. 5) or Hideyasu (Fig. 16) can be interpreted to position the cut piece by bringing the step into contact with the fixed die.

g) The press forming performed on the thermoplastic and metallic strip of Harris would maintain a condition where the decorative layer is harder than the molding main body.

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the methods of Harris and Hideyasu into that of Koji in order to vary

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the functional, tactile, or aesthetic characteristics of the material, produce a pleasing rounded edge with attaching means. Additionally, Koji suggests a thermoplastic material, which Harris provides. **As to Claim 14**, Hideyasu provides embedding a core material having a greater rigidity than that of the molding main body into the leg portion (Drawing 17, item 85), removing the core material in the second region (Drawing 15, bent end), and the portion without the core material being bent (Drawing 15).

6. **Claims 24-29** are rejected under 35 U.S.C. 103(a) as being unpatentable over Davies (USPN 2500895) in view of Hideyasu (JP 2001-088155, of record). Davies teaches a molding manufacturing method for manufacturing having an end shaped portion in a predetermined shape out of a long body, comprising:

preparing a molding apparatus including a fixed die (G in Fig. 6), a first movable punch to be used to close the fixed die (J in Fig. 6), and a second movable punch (H in Fig. 6), the fixed die having a back forming surface for forming a back surface of the end cover portion (Fig. 6), the first movable punch having a front forming surface which is connected to and substantially integral with a sandwiching portion for forming a front of the end cover portion (J in Fig. 6), and the second movable punch capable of changing a volume of a cavity formed between the front forming surface and the back forming surface (Figs. 6 and 7);

setting the molding body in the fixed die in a state that an end portion of the molding body protrudes from an end of the fixed die (Fig. 5); moving the first movable punch to close the fixed die therewith (Figs. 4-7), while bringing the first movable punch into contact with the end

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portion to bend the end portion in a back surface side thereof (Figs. 4-7), to form an end bending portion in the cavity (Fig. 6); and

moving the second movable punch so as to reduce the volume of the cavity to apply a compressive force to the end bending portion to press a material forming the end bending portion closely onto the front forming surface of the first movable punch and the back forming surface of the fixed die (Figs. 6 and 7).

Davies is silent to (a) heating and softening the end portion, (b) reducing the volume of the cavity “while keeping the vicinity of a bending center portion of the end bending portion in a fluid state”, and (c) moving the second movable punch while the first movable punch is closed to reduce the volume of the cavity to be filled with a material.

However, (a) and (b) are obvious over Hideyasu, who teaches heat softening (paragraph 28) of decorative and functional trim (Figs. 12-15), which would provide a fluid state and a heated and softened end portion. As to step (c), Davies provides substantially the same relative movement as claimed, and also reduces the volume of a cavity to be filled (Figs. 4-7).

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Hideyasu into that Davies of because Hideyasu clearly suggests the type of apparatus (Fig. 11) that Davies provides (Figs. 4-7), and because Hideyasu would have found the additional shapes provided by Davies desirable.

As to Claim 25, the radius of curvature of Davies’ has an internal angle portion which fulfills the claimed condition, and in the alternative, it would have been prima facie obvious to vary the shape of the end for desirable aesthetic effect. **As to Claim 26**, the moving forward of Davies shortens a length of the end bending portion. **As to Claims 27 and 28**, Hideyasu covers

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the end of the distal portion (Fig. 4), and thus it would fulfill the condition that “a temperature of the distal end of the end bending portion is reduced than a temperature of a bending center of the end portion”, and doing so would obviously maintain the end portion in a harder condition. As to **Claim 29**, in the setting step, Davies’ protruding end is set longer than a length of the finished end cover portion and shorter than a length of the front forming surface of the movable punch (Fig. 5, J’), and in the step of moving the first movable punch, the punch closes the fixed die so that an end of the bending portion remains in the cavity, and the second movable punch is moved toward a part of the cavity opposing to the end of the end bending portion.

Response to Arguments

7. Applicant's arguments filed 26 December 2006 have been fully considered but they are not persuasive. The arguments appear to be on the following grounds:

- a) There is no motivation to combine because Koji teaches only a single thermoplastic material.
- b) Koji teaches multiple stations, and would cause the molding to be displaced from the die.
- c) Claim 1 is amended to recite formation by co-extrusion.
- d) Koji teaches only a single material, and press forming the material of Koji would not provide a decorative layer being harder than the molding main body.
- e) Koji’s Figure 4, element 30 is a heater case, and cannot be characterized as a reflector, and does not have a focal point.
- f) Loy’s article is a laminate, not a molding.

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g) Hideyasu does not teach a main body which is different from and lower in hardness than the surface layer. Applicant's have provided facts rebutting the presumption of operability in Sketch 2 filed 18 July 2006.

h) All members of Davies and Hideyasu are movable. A new limitation to a sandwiching portion that is integrally formed is submitted.

8. These arguments are not persuasive for the following reasons:

a) Motivation may come from either reference, or from the knowledge generally available to one of ordinary skill in the art. The arguments appear to assert that because Koji appears to teach only a single material, that there can be no motivation to provide a covering layer. However, the arguments do not appear to address or dispute the motivation provided, namely that one would have been motivated to provide a covering to improve the appearance.

Additionally, note that no step of co-extrusion is claimed in Claim 1, and the new limitations appear to be drawn to working on a material that could have been formed by co-extrusion. Because the material of Sims could have been co-extruded, it still meets the claim by providing the same structural features that would be found in a coextruded preform. This claim is distinguished from others now pending which provide a distinct step of co-extrusion.

b) The argument to the use of multiple stations is unclear. Note that in Drawings 5 and 6, the same material (item 14) is present on the same die surface (28a), and thus it is unclear how there is movement that would materially affect the method, or how the instant claims would exclude this movement.

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c) Note that the claim does not recite a step of co-extruding, but only provides a material formed by co-extrusion. The article of Sims has a structure that is the same, or substantially the same as a coextruded structure, and therefore meets the structural limitations of the preform which is subsequently reshaped.

d) In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Other references have been relied upon for teaching of preforms having substantially the claimed characteristics. Also note that a new rejection over Harris is presented above, and provides a metallic layer to improve the appearance of the window molding, and it is asserted that coextrusion of a composite having a metallic surface covering will provide a surface that is harder at room temperature and elevated temperature than most or all plastic materials.

e) The Examiner respectfully disagrees, and asserts that because the case (30 in Drawing 5) extends below the face of the heater element, it would provide a reflecting function.

Additionally, the rejection presents a combination of references, and it is unclear why focusing of the infrared source, as provided in the rejection, would be undesirable to Koji.

f) Loy reshapes an article, and is therefore a molding process. While Loy does teach attachment during the reshaping process, there is no reason why the device and reshaping process would be undesirable in the combination of references simply because of its teaching of additionally laminating the preform to another material.

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g) The main body is provided by Sims or Harris in the rejections above. Applicant's sketch appears to provide opinion evidence only that a line would necessarily be present, but does not provide any supporting evidence.

h) The members of Davies and Hideyasu provide the same or substantially the same relative movement as claimed. Limitations to stationary mold parts or movement of particular mold parts would not distinguish the claim limitations from the prior art which teaches substantially the same relative movement.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J. Daniels whose telephone number is (571) 272-2450. The examiner can normally be reached on Monday - Friday, 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571) 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MJD 3/14/07

MJD


CHRISTINA JOHNSON
SUPERVISORY PATENT EXAMINER

3/16/07